CONTENTS OF *AQUACULTURE*, VOLUME 78

VOL. 78 NO. 1 — 15 APRIL 1989

Diseases, Parasites and Predators

Induction and development of bacterial gill disease in the eel (*Anguilla japonica*) experimentally infected with *Flexibacter columnaris*: pathological changes in the gill vascular structure and in cardiac performance
R. Foscarini (Miyazaki, Japan) 1

Genetics and Breeding

Estimation of heritabilities for growth, body size, and processing traits in red swamp crawfish, *Procambarus clarkii* (Girard)
C.G. Lutz and W.R. Wolters (Baton Rouge, LA, U.S.A.) 21

Husbandry and Management

First feeding of Atlantic salmon (*Salmo salar* L.) fry as influenced by temperature regime
R.H. Peterson and D.J. Martin-Robichaud (St. Andrews, N.B., Canada) 35

Physiology and Endocrinology

Influence des anomalies de dévelopment de la vessie natatoire sur la mortalité de *Dicentrarchus labrax* au cours du sevrage (The effects of abnormalities in the development of the swim bladder on the mortality of *Dicentrarchus labrax* during weaning)
B. Chatain and G. Dewavrin (Palavas-les-Flots, France) 55

Seasonal changes in thyroid and reproductive steroid hormones in female channel catfish (*Ictalurus punctatus*) in pond culture
D.S. MacKenzie (College Station, TX, U.S.A.), P. Thomas (Port Aransas, TX, U.S.A.) and S.M. Farrar (College Station, TX, U.S.A.) 63

Lack of antigenicity of human chorionic gonadotropin in silver carp (*Hypophthalmichthys molitrix*) and goldfish (*Carassius auratus*)
G. Van Der Kraak, N.W. Pankhurst, R.E. Peter (Edmonton, Alta., Canada) and H.R. Lin (Guangzhou, China) 81

Book Reviews

Reservoir fisheries in Asia 87
Seaweeds as a natural resource 89
Age and growth of fish 91
Information leaflets — salmonid diseases 93

Books Received 93

Erratum 94

Announcement 94

VOL. 78 NO. 2 MAY 1989

Review

A review of *Gracilaria* farming
B. Santelices (Santiago, Chile) and M.S. Doty (Honolulu, HI, U.S.A.) 95

Diseases, Parasites and Predators

Tolerance level and histopathological response of milkfish (*Chanos chanos*) fingerlings to formalin
E.R. Cruz and C.L. Pitogo (Iloilo, The Philippines) 135

Resistance to ozone of zoospores of the thraustochytrid abalone parasite, *Labyrinthuloides haliotidis* (Protozoa: Labyrinthomorpha)
S.M. Bower, D.J. Whitaker (Nanaimo, B.C., Canada) and D. Voltolina (Baja California, Mexico) 147

Genetics and Breeding

Response to selection for early spawn date in rainbow trout, *Salmo gairdneri*
L. Siitonen (Jokioinen, Finland) and G.A.E. Gall (Davis, CA, U.S.A.) 153

Husbandry and Management

Comparison of mechanical shock sensitivity of eggs of five Pacific salmon (*Oncorhynchus*) species and steelhead trout (*Salmo gairdneri*)
J.O.T. Jensen and D.F. Alderdice (Nanaimo, B.C., Canada) 163

Nutrition

Choline requirement of hatchery-produced juvenile white sturgeon (*Acipenser transmontanus*)
S.S.O. Hung (Davis, CA, U.S.A.) 183

Technical Paper

Chronic cannulation of the hepatic portal vein in rainbow trout, *Salmo gairdneri*: a prerequisite to net absorption studies
E. McLean and R. Ash (Bradford, Great Britain) 195

VOL. 78 NOS. 3/4 JUNE 1989

Diseases, Parasites and Predators

Disinfectants and therapeutic agents for controlling *Labyrinthuloides haliotidis* (Protozoa: Labyrinthomorpha), an abalone pathogen
S.M. Bower (Nanaimo, B.C., Canada) 207

Mortality associated with phytoplankton blooms among farmed Atlantic salmon, *Salmo salar* L., in Scotland
D.W. Bruno, G. Dear and D.D. Seaton (Aberdeen, Great Britain) 217

Genetics and Breeding

Triploidy induction by thermal shock in the Manila clam, *Tapes semidecussatus*
E.M. Gosling and A. Nolan (Galway, Ireland) 223

Triploidy induction in recently fertilized Atlantic salmon ova using anaesthetics
R. Johnstone, R.M. Knott, A.G. Macdonald and M.V. Walsingham (Aberdeen, Great Britain) 229
The 'YY' supermale in *Oreochromis niloticus* (L.) and its potential in aquaculture
A.G. Scott, D.J. Penman, J.A. Beardmore and D.O.F. Skibinski (Swansea, Great Britain) 237

Husbandry and Management

Spatial and temporal variation of water column measurements in aquaculture ponds
S.L. Wei (Honolulu, HI, U.S.A.) and E.A. Laws (Honolulu and Kaneohe, HI, U.S.A.) 253
The effects of water exchange rate and density on yield of the walking catfish, *Clarias fuscus*
J.S. Diana (Ann Arbor, MI, U.S.A.) and A.W. Fast (Kaneohe, HI, U.S.A.) 267
Effect of environmental temperature on survival, growth and population structure in the mass rearing of the gilthead seabream, *Sparus aurata*
A. Tandler, M. Har'el, M. Wilks, A. Levinson, L. Brickell, S. Christie, E. Avital and Y. Barr (Eilat, Israel) 277
Piscicidal plants of Nepal: toxicity to air-breathing predatory fish (*Ophiocephalus punctatus, Clarias batrachus* and *Heteropneustes fossilis*) and the duration of risk to cultivated fish
A.T. Kulakkattolickal (Chitwan, Nepal and Montreal, Que., Canada) 285
Piscicidal plants of Nepal: ripe fruit of *Catunaregam spinosa* (Thunb.) (Rubiaceae) and leaves of *Polygonum hydropiper* L. (Polygonaceae) as fish poisons
A.T. Kulakkattolickal (Chitwan, Nepal and Montreal, Que., Canada) 293
Effects of nutrient availability on primary productivity and fish production in fertilized tropical ponds
F. M. Yusoff (Selangor, Malaysia) and C.D. McNabb (East Lansing, MI, U.S.A.) 303
Packaging of the guppy, *Poecilia reticulata*, for air transport in a closed system
L.H. Teo, T.W. Chen and B.H. Lee (Kent Ridge, Republic of Singapore) 321

Nutrition

Influence of algal diets on biochemical composition and energy reserves in *Patinopecten yessoensis* (Jay) larvae
J.N.C. Whyte, N. Bourne and C.A. Hodgson (Nanaimo, B.C., Canada) 333

Physiology and Endocrinology

Effects of oral administration of 17α-methyltestosterone and 17β-estradiol on gonadal development in common carp, *Cyprinus carpio* L.
J. Komen, P.A.J. Lodder, F. Huskens, C.J.J. Richter and E.A. Huisman (Wageningen, The Netherlands) 349
Characterization of male reproductive tract degenerative syndrome in captive penaeid shrimp (*Penaeus setiferus*)
P. Talbot, D. Howard (Riverside, CA, U.S.A.), J. Leung-Trujillo (Corpus Christi, TX, U.S.A.), T.W. Lee, W-Y. Li, H. Ro (Riverside, CA, U.S.A.) and A.L. Lawrence (Corpus Christi, TX, U.S.A.) 365

Technical Paper

A counting device for oyster larvae
K.Y. Børsheim and S. Norland (Bergen, Norway) 379

Book Reviews
Cage aquaculture 383
Intensive fishfarming 384
Salmon and trout farming 385
Salmon farming handbook 387
Aquaculture management 389

Announcement 390

Note from the Publisher 391

Author Index 393

Contents of *Aquaculture*, volume 78 397